THE

HORTICULTURIST.

VOL. XXII.....MAY, 1867 .....NO. CCLI.

POPULAR EVERGREEN TREES.

[CONTINUED FROM APRIL NUMBER.]

THE MAMMOTH TREE OF CALIFORNIA. *Sequoia gigantea.*—The growth and appearance of this new California evergreen are extremely graceful and beautiful. With foliage between the arborvitæ and cypress, it throws out its limbs or branches

FIG. 59.—*The Lawson Cypress.*

at first horizontally; but they soon assume a gentle, graceful curve upward, that gives the tree a light, easy, attractively-pleasing form. Its hardihood is perhaps not yet perfectly tested, but there is every reason to believe, from the many exposures that trees of it have received, and their so far success, that it will prove hardy in most

locations. The tree, from the peculiar habit it has of making perpendicular rather than horizontal roots, should be transplanted while quite young, say not more than two or three years old. As a graceful lawn tree, looking forward to immense size, or as a tree in the formation of light and airy groups on new places, it should be freely planted.

THE THUJOPSIS BOREALIS is a new evergreen, with delicate foliage, resembling somewhat the cypress, rather dark in color, of a rapid growth, hardy; and for planting where delicacy in spray and foliage is desirable, it promises of value. We have seen few specimens of any size.

THE LAWSON CYPRESS. *Cupressus Lawsoniana.*— This we consider one of the greatest acquisitions that has been made for many years to our list of hardy ever-

FIG. 60.—*The European Silver Fir.*

greens. Its foliage resembles the arbor-vitæ, but its habit is that of the hemlock. As a lawn tree, or for association and planting near water, or in cemeteries where there is room, its beauty of foliage and form renders it every way desirable. There is a variety of this called Pyramidalis, that is more dense and upright, but to us not as beautiful.

THE BALSAM FIR. *Picea balsamea.*—The Balsam Fir is a very handsome, compact, erect-pointed tree while young; but as it acquires age its lower limbs die away; and as a single tree it often presents a ragged, neglected appearance. As a center tree, or for points in the formation of groups, it is desirable; and as a tree for belts, where very heavy winds are experienced, it proves admirably adapted. In light, sandy soils its beauty lasts about twelve

years, while in rich, deep clay loams it carries its foliage on the lower limbs and its beauty from twenty to thirty years. Where it can be had cheap, it is well suited for massing, using the European Silver Fir and American Spruce for outsides.

THE EUROPEAN SILVER FIR. *Picea pectinata.*—The European Silver Fir is one of our most beautiful evergreen trees. From its slow growth while young, and often losing its leading shoot until it gains a height of six to eight feet, many persons neglect planting it. They, however, do not know its lasting beauty and permanence of form as it acquires age, or they would never leave it out of a collection. Its branches are spreading horizontally erect, while its foliage is always a rich dark green on the upper side, and silvery underneath, and, unlike many other ever-

FIG. 61.—*The American White Spruce.*

greens, it never looks dingy at any season of the year. A rich, deep, rather moist soil suits it best, and it groups elegantly with magnolia acuminata, the American ash, and ginko. It does not answer well as a screen plant for belts, being unable to endure exposed situations where severe winds and storms beat against it, and yet it is perfectly hardy. It should be remembered, when planting, that this tree acquires a large size, and must have plenty of room.

THE NORDMAN'S FIR. *Picea Nordmaniana.*—This is an old variety, but comparatively rare. It is of rapid growth, with rich green foliage, that attracts your attention at once. It is perfectly hardy, and should be more generally grown and planted.

THE PINSAPO FIR. *Picea Pinsapo.*—This is an elegant tree, with short, roundish, sharp-pointed leaves, set thick around all its branches and shoots, giving the

tree rather a stiff, but unique and beautiful appearance. It is quite hardy, and so distinct and regular as to make it desirable as a lawn or single tree. The Noble Silver Fir, the Mount Enos Fir, Hudson's Bay Fir, and Cephalonian Fir are all hardy, and varieties of value in large grounds. The Cephalonian is of a spreading habit, broad rather than high, and for planting in position where some ground scene is desirable to be hidden without obstructing the upper view, is a tree for adoption.

The American White Spruce. *Abies alba.*—For planting in small grounds, for the outskirts of groups and masses, for points on roadways, and for cemeteries, the American White and Red Spruces are deserving of far more general use than they have received. Pyramidal tapering,

Fig. 62.—*The American Red Spruce.*

regular and yet irregular, compact without losing its pleasing variety of regular outline, attaining only a moderate size, the White Spruce is far more suited to position on small lawns or outside masses, or borders of half-acre lots, than the Norway, which is much more commonly planted.

The American Red Spruce. *Abies rubra.*—The American Red Spruce has a half drooping habit, especially of its young branches, and its whole form while rising to a cone is decidedly picturesque. As a tree to aid in creating a romantic effect on a rocky point, or to associate with the flowing ease and mellowness of water scenery, it is well suited; and so also from its limited size and irregular drooping yet airy form, counterbalanced by its dark and almost gloomy foliage, is it well adapted for planting in cemeteries.

The Norway Spruce. *Abies excelsa.*—The Norway Spruce is now *the* popular

evergreen tree for all planting. Unfortunately, it is used without regard to appropriateness of position or space, and hence, while beautiful in itself when allowed room for development, it frequently has to be so mutilated, in order to keep it within the limit which can be granted, that it is no more a Norway Spruce, or tree of beauty. Of the thousands sold and planted, few, comparatively, ever exhibit the character of grandeur and graceful beauty that belongs to the true Norway. Among the millions in nurseries, all grown from seed, a large number have no characteristics to ever make them trees of grandeur, while yet they may be trees of beauty. The planter in selecting should look for plants with long, pendent shoots, rather

FIG. 63.—*The Norway Spruce.*

than stiff, erect, or horizontal ones, as it is only the former that will make trees of the greatest beauty. For masses or groups, this swaying, drooping, picturesquely-graceful habit is of less consequence than when the tree is to stand by itself, and for hedge or belt screen growing, to which the Norway is well adapted, the close, stiff, erect-growing plants are probably the best. The Norway bears the shears with impunity, but, except for hedges, or perhaps the shortening of an occasional irregularly extending branch, we consider the use of shears as a practice in clipping the trees as erroneous, and creating only a stiff bank or cone of green where there should be flowing lines and light and shade, varying with every breeze.

The Norway does the best in a light, rich loam, but will grow freely in any soil not wet. In positions where it develops itself fully as a single tree, or for grouping or massing, it is one of the very finest; but the planter who can give to it only an area of ten to fifteen feet diameter should substitute the American White Spruce in its place.

As we have said, there are in the seed rows of growers many varieties, some of which are occasionally selected out and specifically named, and the experienced amateur or professional man can select from them trees to make a great diversity of form, habit of growth, and shade of foliage, by which he will add to the beauty of a park or small private grounds, and yet have all Norway Spruces.

The Hemlock Spruce. *Abies Canadensis.*—The Hemlock, common in all portions of our Union, possesses features of elegance and beauty unlike that of any other hardy variety. When standing alone, or on the outskirts of small groups, its dark yet loose-looking foliage, hanging in pendulous tufts from its peculiarly graceful, half-curving branches, render the tree one of the most ornamental, and suited to a place in decorating the grounds of almost every residence. It is a tree that bears the shears well, and is therefore adapted to hedge or screen planting. When grown in the nursery, it is no more difficult to transplant than other evergreens, although it has been declared very sensitive of removal —probably by those who had no experience except with its removal from the woods. It is, as we have said, a beautiful tree for the open lawn, but it lacks stateliness to adapt it for position near the main residence or buildings.

Fig. 64.—*The Hemlock Spruce.*

THE ARTIFICIAL FOUNTAIN.

BY D. D. SLADE, BOSTON, MASS.

WATER is an essential element in the beauty of a landscape, whether it presents itself in the form of sea, lake, river, or running brook, and no landscape gardening can be perfect without its addition in some form. Switzer says, "Even as *Paradise* itself must have been deemed an unmodeled and imperfect plan, had it not been watered by the same Omniscient hand which first made it, so our gardens and fields, the nearest epitomy and resemblance to that happy place which is to be met with here below, can not be said to be any way perfect or capable of subsisting without it."*

While we do not deny the grandeur of the ocean, or the beauties of the lake, with its ever-changing surface, for ourselves, if searching for a country home, we should give that spot our choice which combined, with other advantages, of course, a running stream in the form of river or brook. A rapid stream it should be, brawling over its pebbly bed, and noisy enough to be heard as we sit within the porch in the quiet eve of a long summer's day, with lighted pipe, and dear friends about us, and just loud enough, as we lie down upon our couch, to mingle its lulling sounds with healthful slumber.

How strong and ever present are the laws of association! Even now as we write, we hear the murmuring of the Saco, as it rushes in its headlong course over its rocky bed, behind the dwelling of the old man Crawford—a fit requiem for the soul of one whose manly nature was well known to every one who in former days visited the mountains of New Hampshire. A fit requiem also for those unhappy ones who, many summers ago, terrified by the coming avalanche, rushed from their mountain home, only to be swept away in the cold embrace of its swollen waters. Mingled with these sounds, too, we see visions of those dark, limpid pools, overshadowed by the crumbling bank or shapeless stump, and darkened by the overhanging mountain hemlock, from which we have drawn many a struggling denizen of the stream. We see, too, as we sit in the late summer afternoon at the open windows of this same dwelling, the dark clouds that are gathering upon the mountain tops, and we hear the distant thunder as it mingles with the nearer murmur of the hurrying Saco. All this in turn brings to mind the hills of Scotland, and the rippling of the Tweed at Abbotsford, the sound that Walter Scott loved so well, and the only one, as Lockhart tells us, that on that summer's day broke the stillness of the death-scene of that whole-souled man.

Fortunate is he, then, who, with other elements of beauty about him, can combine upon his own grounds the gurgling of the river or brook, or the noise of the tumbling cascade. Even fortunate is he, who, in the absence of these, can boast in some secluded shady dell the cool, sparkling spring, bubbling up from beneath the shelving rock, forming as it runs away the tiny rivulet, and moistening in its course the graceful fern and clinging moss—safe bathing-place for the humblest bird.

How many of us, as we have stopped on a summer's day far away among the hills, to refresh ourselves and our jaded beasts, have wished that we might transport to our own domains the old wooden wayside trough before us, lined with its dark-green moss, and filled to overflowing with its flashing waters, as they come pouring into it from some rudely hollowed tree!

* Ewbank's Hydraulics.

But if we can not possess the running stream or the trickling rivulet, we may in some measure supply their place by the artificial fountain. We do not purpose to trace the history of this handiwork of man, in use from the most remote antiquity, curious as it might be; neither do we give here the details of costly works for the subterranean conveyance of waters. We do not speak of *les grandes eaux* of Versailles, or of the wonderful cascade at Chatsworth, but we shall treat of the introduction of water into the garden and conservatory in a way that may be compatible with the most moderate means.

In the construction of the artificial fountain, the first thing to be considered is the supply of water. When a brook can be commanded, this may be easily obtained by means of the hydraulic ram. In lieu of this, where no such resource is at hand, let there be constructed a tank of good sound plank, oblong in shape, and of as large a size as the place where it is to be located will admit. This should be lined with zinc, or with lead, which is more durable, although at first cost more expensive, and placed either in the loft of the stable, outshed, or in the attic of the house, in such a position that it may be supplied by the rain which falls upon the roof. Care should be taken that it is easily accessible for repairs or for cleaning. A tank made simply of plank and painted inside may be of course much more easily constructed, and might under some circumstances answer every purpose. In our northern climate, however, such a one, during a summer's drought, or during the winter, when no water could be allowed to remain in it on account of the danger of freezing, would certainly become leaky, and in a very short time perfectly worthless. Where the reservoir can not be placed so as to receive the water directly from the roof, it may be thrown into it from the common cistern, by means of the force-pump, which can now be purchased at a very reasonable price. In such a case there would be no necessity for a new tank, but a pipe may be conducted to the fountain from the one which supplies the bath-room, etc., of the house. In the construction of a dwelling, or where water-pipes are to be introduced into one already occupied, the supply for a fountain may be taken into consideration and easily provided for by increasing the size of the tank or reservoir beyond that which would be absolutely necessary for household purposes.

The windmill is sometimes erected for the purpose of raising water from a well into a cistern for the supply of a fountain. Where this might be made available for other purposes, possibly it might compensate for the greater outlay, and for the almost constant repair which would probably be necessary to keep it in running order. We leave out of view the vexation attendant upon such contrivances.

The supply of water being provided, the next question is as to the design of the fountain and the form of the jet. When the amount of water is as limited as it must necessarily be from so artificial a source as the tank or reservoir, filled as we have described, we can only have a very small jet, and that by no means constant. Under such circumstances a much more pleasing effect may be produced where the water is allowed to trickle from a basin, as in the weeping fountain, so-called, than where it is thrown upward in a single perpendicular jet—the stream in this last case being often so small as not to be visible, except when seen in certain positions. Within doors, as in the conservatory, where this small jet is not liable to be thrown aside by the wind, it may be sometimes introduced with advantage.

The weeping fountain consists of an upper basin into which the water is brought by the conduit pipe in just sufficient quantity to overflow on every side into the larger basin below it. By carrying the pipes to a level with the outer edge of the upper basin, the water may be

thrown a foot or more, if desired, perpendicularly, or it may be allowed to simply boil up a few inches, falling into the basin and overflowing. The designs and materials for such a fountain may be extremely varied, particularly if the supply of water is more copious than in the cases which we have just been considering.

We lately suggested the following design for a gentleman's conservatory: The vase or upper basin formed from an irregularly shaped block of freestone, nearly circular, and about two feet in diameter. This was supported from the center of the lower basin, which was circular and two feet more in diameter, by three blocks of the same stone, placed, as it were, carelessly, one upon the other. These were bored for the passage of the conduit pipe. The whole was rough hammered, the intention being to present an object in harmony with the vines and plants about it. The spray of the water dripping or flowing from the upper into the lower basin is quite sufficient to moisten the ferns and aquatic plants set about its base. The entire height of this fountain was about four feet.

A rustic fountain, when in a suitable locality, can not fail to please the eye of taste. This may be constructed by concealing the pipe behind and below a well-arranged rock-work, and allowing the water to flow or trickle down from stone to stone (the supply being regulated by a stop-cock, so placed as to be easily commanded) into a stone basin below. If care is taken to select stones from the borders of a brook well covered with moss, or from an old stone wall incrusted with lichens, the general effect is very much heightened. By filling the interstices with soil, we have a locality well adapted for the growth of ferns, vines, and climbing plants. A fountain of this description requires to be placed away from buildings, and where it will harmonize with the objects about it. If otherwise situated it is incongruous, and fails to satisfy.

A wall fountain, as it is termed, is everywhere admissible in close contiguity with the sides of buildings. A shallow arch of rough brick or unhammered stone, about five feet in height by three in breadth, is to be built. The conduit pipe being brought to the mouth of a lion, griffin, or other animal's head, placed at the upper third of the arch, is allowed to pour into the basin below. Where the supply of water is limited, we may substitute some other design, as for example, three or four shells of different sizes, placed one above the other, at certain distances, according to the size of the structure, the smallest being the uppermost, and into which the conduit pipe is brought. The water thus flows or drops from shell to shell. Hughes, in a recent English publication, depicts a fountain of similar character. About the arch may be entwined the English ivy, or, better still, our Virginia creeper.

There is no end to the designs and decorations which the ingenuity of the man of taste may devise for the artificial fountain. One point, however, is to be kept strictly in view, viz., that the water should not become secondary to the architectural display, particularly where the supply is a limited one, and the fountain is placed in the garden or grounds.

Shirley Hibbard, in an article on collecting ferns, published in the *Floral World*, says: "The lover of ferns is always in want of certain species and varieties; the cultivator of succulents, of bulbs, of hardy herbaceous plants, of choice trees and shrubs, finds that his possessions are so many keys to the vegetable kingdom, and at every advance of knowledge accomplished by their aid, he learns how many more interesting and beautiful plants there are in the world which he has not yet obtained, and which he would rejoice to possess."

PROPAGATION OF PLANTS.

BY ANDREW S. FULLER.

FORM OF SEEDS.—Variation is the rule with seeds as well as in all other natural productions. Those which belong to a particular family or genus may have sufficient general resemblance to enable us to determine the group to which they belong, still they will usually vary considerably in their general form. "As near alike as two peas," is a very common expression with people when comparing any two things which resemble each other very closely; still we may safely assert that no two peas are exactly alike.

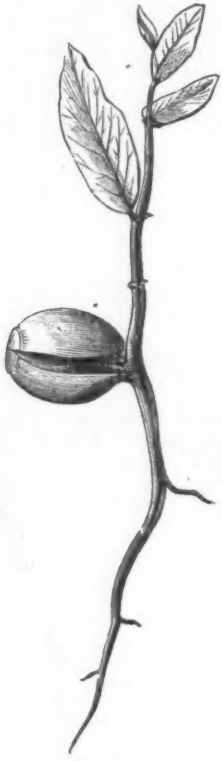

FIG. 65.

In the great font of nature there is infinite wisdom, and nowhere can we find it more wonderfully manifested than in the vegetable kingdom.

No two things are created just alike, and variation to a certain extent appears to be as much a fixed principle in nature as order and uniformity.

By examining the seeds of any of the great families of plants we will find a similarity between the different members, yet they are all distinct.

FIG. 66.

The oaks produce seed which vary greatly in size and form, still they are readily recognized as belonging to one family. No one would mistake an acorn for a hickory nut or beech nut. In structure, the acorn is not particularly different from some other seeds; if has the two fleshy cotyledons, resembling very much the chestnut, or even the common garden bean; and when placed under proper conditions

for growth, the covering which incloses the seed proper, divides lengthwise, as shown in fig. 65, the root descending and the stem ascending, as shown. The bean grows in the same manner, but with this slight exception: the cotyledons are carried up and adhere to the stem, thus forming the lower or primary pair of leaves, fig 66, while in the acorn they are stationary, and usually remain within the half-opened shell until they decay.

Fig. 67.

In fig. 67 is shown an acorn, natural size, of the stalked fruited oak (Quercus pedunculata). Fig. 68 is one of the upright oak (Quercus pedunculata fastigiata); and in fig. 69 is shown the form of the acorn of the Dyer's oak (Quercus tinctaria). These three illustrations will give a general idea of the variations to be met with in the seed of the oaks.

The horse-chestnut (Æsculus) produces seeds of a very similar structure to the oak, and yet they are different both in size,

Fig. 68.

form, etc. The seed envelope, when germination takes place, does not burst open in a regular manner as in the acorn, but is torn asunder by the swelling of the cotyledons, and the stem and roots shoot forth,

Fig. 69.

as shown in fig. 70. There are many other seeds of similar form and structure to those I have mentioned, but the number is far too great for me to attempt their enumeration here.

The hickories and similar nut-bearing

Fig. 70.

trees produce seed inclosed within two very distinct coverings. The exterior one is of a husk-like material. The second, a hard, brittle, horn-like shell, and within this a fleshy substance, which is the seed proper. The black walnut, butternut, and

English walnut are familiar examples of this kind of seed. Fig. 71 shows an English walnut (Juglans regia) entire, with the exterior coat removed, and fig. 72 the seed deprived of both coverings.

If we pass from the nut-bearing trees to other families, we observe a great change in form and structure of the seeds. The maples have what is called winged or key

Fig. 71.

seed (Samara). They are usually produced in pairs, fig. 73, each pair being the product of one flower. The thin, membranous appendage is of no importance to the seed, except assisting in scattering them more widely when falling from the tree than they would be if they were formed without it.

The ash (Fraxinus) produces another form of winged seeds—fig. 74. The seeds of the ash are one or two celled, and the cotyledons are elliptical, and extend lengthways of the seed, not compressed into one end, as seen in the maple. A section of a seed cut across the center is shown in fig. 75. The elms have winged seeds of quite another form, the membrane in these passing entirely around. Fig 76, a seed of the

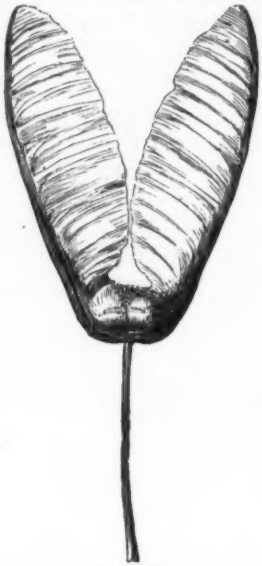

Fig. 73.

cork bark elm (Ulmus campestris suberosa). Fig. 77, Ulmus campestris; and fig. 78, the Ulmus effusa. Other trees produce seeds

Fig. 72.

Fig. 74.

covered with a thin pulp, like the common cherry or the nettle-tree. Fig. 79, Celtis occidentalis.

Most of our common evergreen trees,

such as the pines, spruce, arborvitæs, etc., have winged seeds. Some are very small, while others are large; no true species producing seeds alike, although they are often very similar. Sometimes the chief

Fig. 75.

difference will be in the covering, or in the manner in which they are produced. The least variation is important to the botanist in determining species and varieties, but of little consequence to the propagator so

Fig. 76.

far as assisting him in multiplying the plants, although he is expected to know wherein a variety or species differs from another of the same genus. If he does not know this, he will not be a very reliable propagator, because should his plants become intermingled by accident or other-

Fig. 77.

wise, he would not be able to separate them.

In descending the scale from trees to shrubs, perennial, herbaceous, or annual plants, we will find the same variation in the form and structure of the seed. The

Fig. 78.

treatment, however, to secure growth, is not so variable as the form, although it is sufficiently so as not to allow of any general rule that will be applicable to all

Fig. 79.

kinds; therefore each great family or group requires a process particularly adapted to itself.

[To be continued.]

Time of Blossoming of Trees. — The period of blooming of fruit-trees is regarded by many as indicative of their values in sections exposed to late spring frosts. We shall be glad if any of our friends have made records of the days on which their several varieties of fruit-trees have bloomed, to have them forward us such record, and in connection therewith the soil of the orchard, location, etc.

FIG. 80.—*Design for Dwelling-House—Perspective View.*

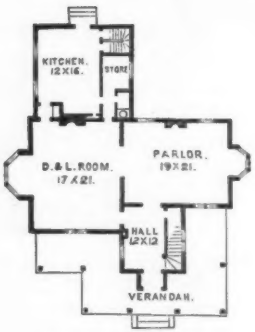

FIG. 81.—*First Floor.*

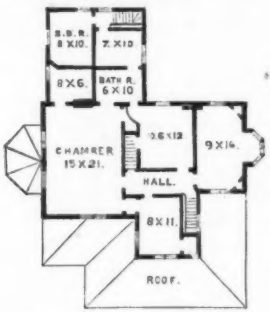

FIG. 82.—*Second Floor*

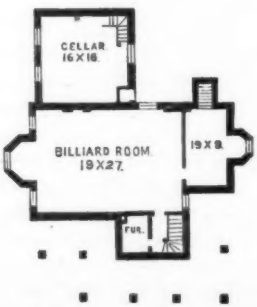

FIG. 83.—*Cellar Plan.*

DESIGN FOR DWELLING-HOUSE.—ITALIAN STYLE.

This design was made for erection in Rutherfurd Park, N. J., and is a good example of a compact, convenient, and economical country house with good commodious rooms, well connected, and easily heated and ventilated. The basement contains besides the necessary cellar and coal requisites, a fine billiard-room; and as a solid substantial foundation is thus secured, it is perhaps the best part of the house for such a purpose, occupying room not needed otherwise, and not objectionable to the most fastidious. The parlor and dining-room connect with each other, and each has independent communication with a spacious hall or vestibule, and this latter it is proposed to fit up in an imposing manner. The stairway is of easy rise and tread, with rail and newel of attractive proportions; the ceilings to be groined, walls paneled, etc.; the full arrangement of bedrooms, closets, etc., is easily seen from the plans; no space is lost—all room is made available.

The construction of the house is of wood, balloon frame, diagonally boarded outside with unworked plank, then covered with roofing felt, and weather boarded with narrow lap-siding. The work throughout to be well done, finish substantial and plain, walls hard finish, tin roof, etc.

The location of this house is such that every room commands extensive river, mountain, and inland views, and from the upper tower room is seen the whole valley of the Lower Passaic, with its fruitful farms and princely country seats, and the distant spires of its two flourishing cities, Paterson and Newark.

Rutherfurd Park is a magnificent estate of upward of 300 acres of handsome rolling land, superbly wooded and watered, and rising from the river bank to an elevation of upward of 100 feet above tide water. It lies three quarters of a mile from the Boiling Spring Depot, Erie Railway, and is reached by a broad and magnificent boulevard running through the entire property. An expenditure of $10,000 makes this one of the finest drives in the country. As a home for New York business men who enjoy country life; who wish to reside within a moderate distance of their business and reach it with absolute certainty from daylight to midnight; who can not afford either the time, the expense, or the annoyance of living above Thirty-eighth Street; who prefer to ride in broad-guage palaces instead of filthy horse cars, Rutherfurd Park and its surroundings present attractions of the most decided and fascinating character.

Annual flower seeds may be sown after the middle of this month. Make the soil rich and finely pulverized with the spade and rake. Smooth the surface, and cover the seed by sowing over it a little clean sand. If dry weather, lay a board over it for a day or two, or until the seeds are pushing up, then place the board so as to screen from sun at noonday, until the plants get an inch or more out of ground. Annuals that have been started in the frames should now be planted out. Open the frames for a day or two before taking the plants out, to harden them, and when setting, protect them for a day or two against cold winds.

Look out for weeds all this month; they grow in a night, and require constant care and labor to keep down.

THE ART OF INCREASING PLANTS BY CUTTINGS.

By far the greater proportion of plants that are multiplied by cuttings require artificial heat. Nevertheless, cuttings of many tender plants may be struck in the open ground, or in pots and in frames, without heat, and in every case the mode of procedure is nearly the same. The object of this paper is more particularly to put beginners in the way of spring propagation, a branch of horticultural practice which has acquired immense importance since gardening has become contracted to an almost exclusive adoption of the bedding system. Very much of what we have to say will be applicable to summer propagation without artificial heat, though our business is more directly with the propagation of plants at this time of year by means of the heat of a tank or a dung-bed. We suppose the heat to be sufficient and constant. If from fermenting material—there should be a large body of it in a nicely-tempered state—there is nothing so good as a tank, for the operator has thus complete command over his work, and can enjoy the comfort of a warm house while attending to his duties. As a rule, a bottom-heat of 60° to 70° will suffice for all kinds of bedding-plants that are struck from cuttings. A temperature of

Fig. 85.

Fig. 84.

80° to 90° may be used by persons who have had much experience, but 70° should be the maximum for beginners.

How to Obtain Cuttings.—As a rule, plants to be propagated from at this time of year should be in a free-growing state. We advise placing old plants of verbenas, petunias, etc., in a moist heat, in order to start them for cuttings, because the best cuttings are those of shoots newly formed, and the worst those from shoots of last year. Indeed, these latter are of no use at all, except in the hands of the professional propagator, and he would never choose them while young shoots were obtainable. If the plants are not freely growing therefore, the propagator must wait for them; and to promote free growth, the tempera-

ture of the house should be kept at from 60° to 70°, with a moderate amount of atmospheric moisture, and as much light as possible, so that the young shoots will be of a healthy green, and with short joints. But at this time of year, the plants the amateur intends to cut from will be for the most part full of young shoots, and the removal of a crop of these will cause the plants to throw out more, and the question arises, how are the cuttings to be made?

Suppose we look over a lot of fuchsias now, we shall find them full of little stubby side-shoots all ready to hand, without demanding any particular skill to remove them. Select one of these plump shoots, of an inch or an inch and a half long, press

Fig. 86.

the thumb against it, and it will snap away "with a heel"—that is, with a thickened base, the separation taking place at the point where it issues out of the old wood. When you have removed it, it will probably have such an appearance as in fig. 84. All that this requires for its preparation is to remove the bud which has just started near the base of the cutting, so as to leave a sufficient length of clear stem to insert the cutting in sand firmly. When so inserted, and kept moist, warm, and shaded, roots will soon be formed at the base; and as soon as the roots have begun to run in search of nourishment, the top of the shoot will begin to grow, which is the

THE DUCHESS OF OLDENBURG APPLE.

BY P. BARRY, ROCHESTER, N. Y.

In the March number of the HORTICULTURIST, Mr. Elliot, with great propriety, gives a prominent place to the Duchess of Oldenburg among the "Very hardy varieties of the Apple." For upward of thirty years this variety has been grown in American nurseries, and it has occasionally been briefly noticed, but on the whole has received just attention enough to maintain its existence among collections.

For some years back, the people of the Northwest—Minnesota, Iowa, Wisconsin, etc.—where the climate is so rigorous that very few varieties of the apple will endure it, have been collecting varieties noted for their hardiness.

Among those which give promise of extreme hardiness, the *Duchess of Oldenburg* appears to stand at the head. At a recent meeting of the Minnesota Fruit-Growers' Association, the following facts were given:

"Truman M. Smith, of Dayton's Bluff, has three Duchess of Oldenburg, standard, planted five years ago. Fruited last and this year, and one dwarf, of same, in bearing, all perfectly hardy.

"Mr. Philo Woodruff, of Waseca County, has three Duchess of Oldenburg in bearing two years, as hardy as any of our forest trees.

"H. J. Brainard, of Ramsey County, has nine Duchess of Oldenburg planted at four years old in 1861, and have all fruited, bearing good crops since 1862; perfectly hardy, not a branch or twig on one of these trees ever injured. Has also some Red Astracan and others perfectly sound. He had lost a great many trees, because almost dead when received and planted, and some not adapted to the climate.

"Col. Robertson had some sixty Duchess of Oldenburg, planted three years ago—the year of drought—all perfectly sound.

"Mr. Smith considered the Duchess as hardy as the Siberian crab apple.

"The meeting was quite unanimous in the opinion that the Duchess of Oldenburg is beyond all question adapted to our climate."

At other meetings in the West, similar statements have been made regarding this variety, and the consequence is an extraordinary demand for the trees. Where half a dozen would formerly have sufficed to fill a season's orders, it is now called for by the hundred, and even the thousand. It is not only hardy as an oak, but the fruit is beautiful and of excellent quality; "best" for cooking, but rather too acid to rank as "best" for dessert.

It is also an early bearer, trees three or four years old being often laden with fruit in the nursery rows. The tree, though a strong grower, with large foliage, like all the Russian apples we have, does not attain a large size. We have a tree in our grounds planted twenty-four years ago, and although healthy and vigorous, is not over two thirds the size of most of the other sorts planted at the same time.

In ordering Russian varieties from the European nurseries, we have received this under a great many names—frequently as "Borovitsky." And, indeed, we have not been able to procure the latter variety, if it exists, which I doubt.

All the Borovitskys we have ever received have proved to be Duchess of Oldenburg. The colored drawing of the Borovitsky, in Lindley's British Fruits, appears to be identical with the Duchess of Oldenburg, and the descriptions in all the pomological works are very unsatisfactory.

The English authors say that the Borovitsky was introduced from Russia to England in 1824. I would like to know if any

of our American fruit-growers have found these varieties to be distinct beyond question. Mr. Downing, I think, has proved them to be identical, and they have been so classed in the American Pomological Society's Catalogue.

The Tetofsky is an early summer variety, from the same source, and will doubtless prove equally hardy. It is said to have been grown at Columbus, Ohio, for many years, under the name of "Fourth of July Apple," brought from Germany without a name.

The Alexander, a noble-looking Russian apple, of medium quality, and the popular Red Astracan, belong to this class, and we shall no doubt get some good winter sorts from Russia, now that attention is directed to that quarter, and our present facilities for communication so great.

I think that at one time the Duchess of Oldenburg was placed on the rejected list at a meeting of the Pomological Society, and so I think was the Alexander, but that was before pomologists had their eyes opened to the varied wants of our extended country with its various climates.

A FEW OF THE MOST EFFECTIVE FLOWERING BEDDERS.

THERE are so many thousands of varieties of bedding plants in cultivation, that amateurs may well be perplexed in attempting to make choice among them. Having for many years past made it a practice to visit and carefully inspect all the great parks and gardens where bedding is carried out with the greatest spirit, and having several large families of bedders always under my eye, I can, perhaps, as well as anybody, direct attention to a few of the most useful bedding plants obtainable for gardens. I shall now enumerate a few of the most telling flowers.

CALCEOLARIAS.—Bird of Paradise and Canariensis are the two best in cultivation, not only for effect, but for withstanding the various assaults to which calceolarias are subjected when planted out, especially drought. Some of our readers may remember an account we have somewhere given of an experiment with calceolarias. They were planted in a mixture of one half mellow loam and the other half thoroughly rotted manure. They grew luxuriantly and flowered superbly, and continued good till far into September. This was last year (1866), when there was a general failure of the plant, and many gardens were completely spoiled in respect of colouring by the loss of yellow. The following are also good: Aurea floribunda, dwarf and bright; Tom Thumb, gold yellow, very dwarf; Prince of Orange, brownish orange; Amplexicaulis, tall and pale yellow. This last is of great value when skillfully used; if required to be dwarfed, it may be pegged down.

DAHLIAS.—The following are the best four bedding varieties: Queen of Whites, the best white; Duke of Newcastle, yellow; Scarlet Tom Thumb, scarlet; Crimson Gem, fine crimson. It is impossible to have dahlias in flower early in the season; to do them well requires ample space, an open, sunny position, and a free but not over-rich loamy soil.

GERANIUMS.—The best scarlets are Cybister, Black Dwarf, and Kate Anderson. The best pink are Christine and Wiltshire Lass. The best red are Rebecca and Lady Middleton. The best salmon are H. W. Longfellow and Eugenie Mezard. The best crimson are Rival Stella (this has plain green leaves, and flowers very abundantly; it is every way first-rate), Le Grand, and Crimson Queen. The best white is White Perfection. The following new varieties are splendid in quality, and should be secured as quickly as possible by all cultivators of bedding plants: Duchess of Sutherland, rosy purple; Lady Constance

THE ART OF INCREASING PLANTS BY CUTTINGS.

By far the greater proportion of plants that are multiplied by cuttings require artificial heat. Nevertheless, cuttings of many tender plants may be struck in the open ground, or in pots and in frames, without heat, and in every case the mode of procedure is nearly the same. The object of this paper is more particularly to put beginners in the way of spring propagation, a branch of horticultural practice which has acquired immense importance since gardening has become contracted to an almost exclusive adoption of the bedding system. Very much of what we have to say will be applicable to summer propagation without artificial heat, though our business is more directly with the propagation of plants at this time of year by means of the heat of a tank or a dung-bed. We suppose the heat to be sufficient and constant. If from fermenting material—there should be a large body of it in a nicely-tempered state—there is nothing so good as a tank, for the operator has thus complete command over his work, and can enjoy the comfort of a warm house while attending to his duties. As a rule, a bottom-heat of 60° to 70° will suffice for all kinds of bedding-plants that are struck from cuttings. A temperature of

Fig. 85.

Fig. 84.

80° to 90° may be used by persons who have had much experience, but 70° should be the maximum for beginners.

How to Obtain Cuttings.—As a rule, plants to be propagated from at this time of year should be in a free-growing state. We advise placing old plants of verbenas, petunias, etc., in a moist heat, in order to start them for cuttings, because the best cuttings are those of shoots newly formed, and the worst those from shoots of last year. Indeed, these latter are of no use at all, except in the hands of the professional propagator, and he would never choose them while young shoots were obtainable. If the plants are not freely growing therefore, the propagator must wait for them; and to promote free growth, the tempera-

ture of the house should be kept at from 60° to 70°, with a moderate amount of atmospheric moisture, and as much light as possible, so that the young shoots will be of a healthy green, and with short joints. But at this time of year, the plants the amateur intends to cut from will be for the most part full of young shoots, and the removal of a crop of these will cause the plants to throw out more, and the question arises, how are the cuttings to be made?

Suppose we look over a lot of fuchsias now, we shall find them full of little stubby side-shoots all ready to hand, without demanding any particular skill to remove them. Select one of these plump shoots, of an inch or an inch and a half long, press

Fig. 86.

the thumb against it, and it will snap away "with a heel"—that is, with a thickened base, the separation taking place at the point where it issues out of the old wood. When you have removed it, it will probably have such an appearance as in fig. 84. All that this requires for its preparation is to remove the bud which has just started near the base of the cutting, so as to leave a sufficient length of clear stem to insert the cutting in sand firmly. When so inserted, and kept moist, warm, and shaded, roots will soon be formed at the base; and as soon as the roots have begun to run in search of nourishment, the top of the shoot will begin to grow, which is the

sign for potting off. But suppose we have a chrysanthemum instead of a fuchsia. This will have a mass of tender shoots rising from the root, and there is no need to seek to take these off with a heel. With a knife, a pair of scissors, or the thumb-nail, remove a small shoot of not more than three inches in length—two inches will be sufficient. This will probably have some such aspect as in fig. 85. All the preparation this requires is the removal of the lower leaf, to make a sufficient length of clear stem for inserting it in silver sand. Or suppose we have a hard-wooded plant of robust growth, and which is known to be easily-rooted, then we may venture to take a still larger cutting. Here is a side-shoot of Veronica Lindleyana (fig. 86); it consists of four joints, is young, the wood not yet hardened, and needs no preparation at all, because there is a proper length of stem for its insertion. But in the case of plants having large fleshy leaves, it may sometimes be needful to crop off half of every leaf except those next the top bud; but, as a rule, as many leaves should be allowed to remain as possible, because the more leaves that can be kept alive while the cutting is making roots, the quicker will it become a plant. No definite rule can be given on this head to guide the inexperienced. It all depends upon how many leaves can be kept alive. If the cuttings are to enjoy a brisk heat, say 70°, with plenty of atmospheric moisture, then nearly all the leaves may be left entire, and especially if the cuttings are in a close propagating frame, or under bell-glasses. But if they are likely to be exposed to draughts, if they are placed in pots or pans in an ordinary green-house, and thus much subjected to evaporation, the leaves must be reduced in number, and all the larger ones must be cut half away.

Another matter of importance in making cuttings is to determine whether they are to be rooted from a joint or not. Most cultivators prefer to cut the shoot close under a joint, so as to obtain roots from that joint. But there is no occasion to cut to a joint; any and every one of the plants ordinarily propagated at this time of year will root as quickly from the "internode" —that is, the portion of stem intermediate between two joints—as from the joints themselves. This is of great importance when cuttings are scarce, as a shoot will often furnish half a dozen cuttings, if taking them at a joint is of no consequence; and only one or two, perhaps, if taking them at a joint is imperative.

The size of the cuttings is a matter of great importance. As a rule, the smaller they are the better. Still, if very soft, many may damp off unless very skillfully handled, so the amateur must secure them moderately firm. Three or four joints will generally suffice of most things, or say nice plump shoots of from one to two inches long. If young side-shoots are scarce, longer shoots may be cut up in lengths of three joints; and if it is a question of raising the largest possible number of plants from the fewest cuttings, then one joint and its accompanying leaf will suffice. Suppose we have a shoot of a verbena placed in our hands to make the most of it; we should first cut it into as many lengths as there were joints, leaving each leaf untouched, and to every joint as much stem as could be got by cutting just *over* instead of just *under* the joints. Then with a sharp knife we should split each of these joints in half, so as to have one bud and leaf to each split portion, and from every one of these we should expect a good plant. We say nothing now of propagating from leaves, etc., because we are writing for beginners, and all the higher departments of propagating are from time to time dealt with in these pages as occasion renders necessary.

Potting the Cuttings.—The most convenient way of disposing of the cuttings is to dibble them into shallow pans filled with wet silver sand, as fast as they are prepared. The best way for those who may have to leave the cuttings in the pans for

any time after they have formed roots, is to prepare the pans with crocks for drainage, and over the crocks to spread an inch of chopped moss or peat torn up into small shreds, or cocoa-nut fiber dust, and then fill up to the brim with clean silver sand. The sand should be quite wet when the cuttings are inserted; and when they have been regularly dibbled in with the aid of a bit of stick, or with the fingers only, it should be placed where there is a bottom-heat of 60° to 70°. A temperature of 80° is allowable when time is an object, but at 60° better plants may be grown; in fact, there is generally too much heat used. From the time of putting the cuttings in heat till they begin to grow, the temperature must be steady, and there must be regular supplies of water. But water given carelessly will surely entail losses. Probably the sand will retain sufficient moisture for eight or ten days without needing to be wetted beyond what reaches it in the process of dewing the leaves. To dew the leaves neatly and timely is one of the most important matters. For the amateur, to whom a few minutes is no object, the best way is to dip a hard brush in water, then hold the brush beside the cuttings, and draw the hand briskly over it. This causes a fine spray to be deposited on the leaves, to prevent flagging; but if the water is given from the rose of a watering-pot, the cuttings, if small, may be washed out of their places, or may be made too wet.

Maxims on Propagating.—The more heat, the more moisture may be allowed, and, *vice versa*, the less heat, the less moisture. Hence, if the heat of the dung-bed declines, or if there come cold weather, at once reduce the supplies of moisture. On the other hand, give water freely if the heat is steady and the cuttings are beginning to grow, which is invariably a sign that they have roots.

Pot them off as soon as possible after they have formed roots. In potting, be careful not to break the newly-formed roots. No matter what the plants are, the soil at the first potting should be fine, and with a considerable proportion of silver sand added. Generally peat and leaf-mold answer admirably as a staple for potting newly-struck cuttings.

Pot in small pots; there is nothing gained by putting the young plants in large pots at first; the soil gets sour before they can root into it. When a few cuttings are struck in common pots, place them next the side of the pot all round.

If the heat can be regulated at will (as in propagating by means of hot water), begin at 60°; after three or four days, increase the heat 5°, in three or four days another 5°, and so on, never passing 75° or 80°, and better to stop at 70°. Too quick a growth results in weakness to the plant.

Cuttings damping off may often be saved by sprinkling silver sand or peat-dust previously dried in an oven, over the surface of the pans. If mildew appear, give air, and dust the leaves with sulphur. Whenever damp breaks out, increase the heat and give more air.

Do not keep cuttings shut up close any longer than can be helped. Give air as soon as they are able to bear it; of course, very little at first, and with great care not to chill them.

After potting, place the pots in bottom-heat, if possible, to promote the formation of fresh roots. Never shift till the first pots are full of roots; then shift without delay, and use the compost proper to the plant.—*Floral World.*

Caterpillars, canker-worms, etc., require to be looked after this month. A sponge dipped in petroleum and applied to them will destroy them, or they may be syringed and destroyed with whale-oil soap-suds.

THE DUCHESS OF OLDENBURG APPLE.

BY P. BARRY, ROCHESTER, N. Y.

In the March number of the HORTICULTURIST, Mr. Elliot, with great propriety, gives a prominent place to the Duchess of Oldenburg among the "Very hardy varieties of the Apple." For upward of thirty years this variety has been grown in American nurseries, and it has occasionally been briefly noticed, but on the whole has received just attention enough to maintain its existence among collections.

For some years back, the people of the Northwest—Minnesota, Iowa, Wisconsin, etc.—where the climate is so rigorous that very few varieties of the apple will endure it, have been collecting varieties noted for their hardiness.

Among those which give promise of extreme hardiness, the *Duchess of Oldenburg* appears to stand at the head. At a recent meeting of the Minnesota Fruit-Growers' Association, the following facts were given:

"Truman M. Smith, of Dayton's Bluff, has three Duchess of Oldenburg, standard, planted five years ago. Fruited last and this year, and one dwarf, of same, in bearing, all perfectly hardy.

"Mr. Philo Woodruff, of Waseca County, has three Duchess of Oldenburg in bearing two years, as hardy as any of our forest trees.

"H. J. Brainard, of Ramsey County, has nine Duchess of Oldenburg planted at four years old in 1861, and have all fruited, bearing good crops since 1862; perfectly hardy, not a branch or twig on one of these trees ever injured. Has also some Red Astracan and others perfectly sound. He had lost a great many trees, because almost dead when received and planted, and some not adapted to the climate.

"Col. Robertson had some sixty Duchess of Oldenburg, planted three years ago—the year of drought—all perfectly sound.

"Mr. Smith considered the Duchess as hardy as the Siberian crab apple.

"The meeting was quite unanimous in the opinion that the Duchess of Oldenburg is beyond all question adapted to our climate."

At other meetings in the West, similar statements have been made regarding this variety, and the consequence is an extraordinary demand for the trees. Where half a dozen would formerly have sufficed to fill a season's orders, it is now called for by the hundred, and even the thousand. It is not only hardy as an oak, but the fruit is beautiful and of excellent quality; "best" for cooking, but rather too acid to rank as "best" for dessert.

It is also an early bearer, trees three or four years old being often laden with fruit in the nursery rows. The tree, though a strong grower, with large foliage, like all the Russian apples we have, does not attain a large size. We have a tree in our grounds planted twenty-four years ago, and although healthy and vigorous, is not over two thirds the size of most of the other sorts planted at the same time.

In ordering Russian varieties from the European nurseries, we have received this under a great many names—frequently as "Borovitsky." And, indeed, we have not been able to procure the latter variety, if it exists, which I doubt.

All the Borovitskys we have ever received have proved to be Duchess of Oldenburg. The colored drawing of the Borovitsky, in Lindley's British Fruits, appears to be identical with the Duchess of Oldenburg, and the descriptions in all the pomological works are very unsatisfactory.

The English authors say that the Borovitsky was introduced from Russia to England in 1824. I would like to know if any

of our American fruit-growers have found these varieties to be distinct beyond question. Mr. Downing, I think, has proved them to be identical, and they have been so classed in the American Pomological Society's Catalogue.

The Tetofsky is an early summer variety, from the same source, and will doubtless prove equally hardy. It is said to have been grown at Columbus, Ohio, for many years, under the name of "Fourth of July Apple," brought from Germany without a name.

The Alexander, a noble-looking Russian apple, of medium quality, and the popular Red Astracan, belong to this class, and we shall no doubt get some good winter sorts from Russia, now that attention is directed to that quarter, and our present facilities for communication so great.

I think that at one time the Duchess of Oldenburg was placed on the rejected list at a meeting of the Pomological Society, and so I think was the Alexander, but that was before pomologists had their eyes opened to the varied wants of our extended country with its various climates.

A FEW OF THE MOST EFFECTIVE FLOWERING BEDDERS.

THERE are so many thousands of varieties of bedding plants in cultivation, that amateurs may well be perplexed in attempting to make choice among them. Having for many years past made it a practice to visit and carefully inspect all the great parks and gardens where bedding is carried out with the greatest spirit, and having several large families of bedders always under my eye, I can, perhaps, as well as anybody, direct attention to a few of the most useful bedding plants obtainable for gardens. I shall now enumerate a few of the most telling flowers.

CALCEOLARIAS.—Bird of Paradise and Canariensis are the two best in cultivation, not only for effect, but for withstanding the various assaults to which calceolarias are subjected when planted out, especially drought. Some of our readers may remember an account we have somewhere given of an experiment with calceolarias. They were planted in a mixture of one half mellow loam and the other half thoroughly rotted manure. They grew luxuriantly and flowered superbly, and continued good till far into September. This was last year (1866), when there was a general failure of the plant, and many gardens were completely spoiled in respect of coloring by the loss of yellow. The following are also good: Aurea floribunda, dwarf and bright; Tom Thumb, gold yellow, very dwarf; Prince of Orange, brownish orange; Amplexicaulis, tall and pale yellow. This last is of great value when skillfully used; if required to be dwarfed, it may be pegged down.

DAHLIAS.—The following are the best four bedding varieties: Queen of Whites, the best white; Duke of Newcastle, yellow; Scarlet Tom Thumb, scarlet; Crimson Gem, fine crimson. It is impossible to have dahlias in flower early in the season; to do them well requires ample space, an open, sunny position, and a free but not over-rich loamy soil.

GERANIUMS.—The best scarlets are Cybister, Black Dwarf, and Kate Anderson. The best pink are Christine and Wiltshire Lass. The best red are Rebecca and Lady Middleton. The best salmon are H. W. Longfellow and Eugenie Mezard. The best crimson are Rival Stella (this has plain green leaves, and flowers very abundantly; it is every way first-rate), Le Grand, and Crimson Queen. The best white is White Perfection. The following new varieties are splendid in quality, and should be secured as quickly as possible by all cultivators of bedding plants: Duchess of Sutherland, rosy purple; Lady Constance

Grosvenor, brilliant orange scarlet; Christine Nosegay, true Christine color, and habit similar to Stella; Warrior, rich scarlet.

VARIEGATED-LEAVED GERANIUMS.—The best white-edged are Flower of Spring and Silver Chain. The best creamy-edged are Variegated Stella and United Italy. The best gold-leaved are Cloth of Gold and Luna. The last-named is richer in effect than Mrs. Pollock, and very much easier to multiply and manage. For abundant flowering, and tolerably good variegation, Variegated Nosegay is worth having; the flowers are a cheerful rose-pink color.

PETUNIAS.—Loveliness, blush with red stripes; Ariel, white with purple stripes; Chancellor, blush barred with purple; Nellie, pure white striped crimson; Purple Bedder, fine purple. Petunias require a fresh, light, rather rich soil.

VERBENAS.—Albert Tellandier, intense carmine; Fire Brigade, crimson scarlet, withstands drought, and will thrive in a poor soil; Azurea superba, cobalt blue; Junius, deep orange, a very curious variety, quite good and capable of important services; La Grande Boule de Neige, the best white; Lord Clifden, scarlet; King of Bedders, crimson red, fragrant; Lord Raglan, carmine.

TROPÆOLUMS.—The "compactum" section comprises some eminently useful varieties, far in advance of all others as bedders. The best are Compactum Luteum improved, yellow, with numerous spots; King of Scarlets, Scarlet Gem, and King of Spots, yellow and amber.

CONVOLVULUS MAURITANICUS.—The habit of which closely resembles that of our little native wayside convolvulus; the flowers are a charming shade of lilac. It is not a showy plant, but intensely pretty, and a capital relief to garish colors.

GAZANIA SPLENDENS is undoubtedly the best of the Gazanias, and a truly splendid bedder. It will flower well in a poor sandy soil, but it must have a sunny position. The charming contrast between its bluish and half glaucous foliage and its splendid orange flowers is most delightful.

HELIOTROPES.—Beauty of the Boudoir and Miss Nightingale are the best of this class for beds.

LANTANAS.—These are rather tender, and require a hot season to bring them out well. On cold damp soils they are of little use. The most generally useful are Fulgens mutabilis and Crocea superba.

NIEREMBERGIA GRACILIS makes a charming mass of pretty white flowers, to tone down the effect of strong colors.

ŒNOTHERA PROSTRATA makes a capital yellow bedder on cold, damp soils.—*Floral World.*

NOTES ON THE MARCH NUMBER.

A TALK ABOUT PORCHES.—In his usual flowing and easy manner the writer has shown us in this article how we may beautify and embellish, without depending or calling upon the scroll-work of carpentry, and while he has put in his recommendation for the construction of porches the features of beauty and expression, I will simply add a word as to their economy. Aside from the enjoyment derivable from their use as a resting-place from sun and storm, the very shade of the porch serves to assist in maintaining a more even temperature in the house, making it cooler in the heat of summer, and warmer from its breaking the force of wind and storm in the winter. I like the sketch of the rustic porch, but doubt the appropriateness of using rustic work in direct association with anything planed or painted. Were our cottages built of stone, with broad projecting roofs and covered with vines,

then a porch of the bodies and branches of the forest trees would be in harmony; but as attached to a white or brown painted house of one and a half or two stories, free from the association of aught but the carpenter's taste in its construction or surrounding, I think a rustic porch would be more unsuited than one of the said carpenter's own design with all its fancy scroll-work.

Drooping Deciduous Trees.—A timely article that to many will be of great interest at this season of the year. It is deeply to be regretted that while we have many deciduous drooping trees perfectly hardy, we have but a very limited number among evergreens. *Thuja filiformis*, a weeping arborvitæ, and *Juniperus oblonga pendula* and *Virginiana pendula*, two varieties of the Red Cedar class, being about the only ones which can be trusted out of doors in our Northern or Middle States. The first two named are, however, extremely well adapted to cemetery planting.

Designs in Rural Architecture—No. 20.—I like all of this design except the tower, and don't know just how I would go to work to change that; but as it is, there seems to me a pretension not fully borne out by the remainder of the building. Will some architect tell me when, if ever, a bay window opening on a porch is admissible in true architecture?

Two New Grapes.—And still they come. At the present rate, the variety and number of grapes will soon outrun that of pears. I have before said that I wished some course could be adopted to check this influx of varieties; but as some persons have made money from the production of new grapes, I suppose we must submit to have our pockets lightened of three to five dollars for highly-praised sorts, until their raising proves a question of doubtful pecuniary profit to the dealer.

Jaminette Pear.—Glad to see this old pear brought out again. I have known it many years grown on the pear root, and giving yearly crops of fruit that are put away in the fruit-cellar and kept until midwinter as well as apples, and then brought out and ripened up, proving rich, juicy, and capital to eat. It should always be left to hang on the tree as late as it is possible without danger of freezing.

The Curculio vs. Peach Rot.—With the writer, I am no believer in the curculio being the cause of the rot in the peach. The fungus is the most probable present cause, and I shall be glad to read J. C.'s way of preventing the peach rot.

Angers and its Nurseries.—Thanks for this article, and I repeat, let no tourist, and especially no horticultural tourist, go to France without visiting Angers.

Wardian Cases.—A few years since everybody almost got up a Wardian Case, some small, some large, until it seemed to be a part of the regular furniture of a house, but during the past two or three years their use has been abandoned, and it is rare at this time to meet with one. Why this is so, I can only account for on the supposition that to enjoy vegetable life one wants to see it growing and changing unrestrained, and a daily contemplation of one or more plants in a confined position by degrees becomes wearisome. To no other cause can I attribute the partial abandonment of the Wardian Case, because it is well known plants of many kinds can be successfully grown therein.

Very Hardy Varieties of the Apple.—All these records of the whereabouts in which distinct varieties of the apple succeed or fail are valuable, and I am tempted to name the Winesap as an old sort that over the whole country will average well as a variety for cultivation. It wants good soil, but not very rich, and will not endure its roots to stand on a hard clay bottom undrained.

Grimes' Golden Pippin is a comparatively new variety that our fruit-growers should test everywhere. Reuben.

ELMS AND MAPLES.

We sometimes observe in horticultural works the term English Elm. This is a vague definition of a tree; about as definite as some of the descriptions of fruit given in the Horticulturist recently by the writer. If a European catalogue should speak of the American Ash or American Hickory, we should certainly be ignorant of the variety for sale.

We have some noble specimens of English Elm, so called, on Long Island, some seventy years planted, which, I presume, are the same variety Reuben saw growing so finely on the grounds of our friend Charles Downing. They are the English Cork-Bark Elm (*Ulmus suberosa*). Again, there are specimens of very fine and quite distinct trees of the English Elm growing here, and they are the Broad-Leaf, or English Field Elm (*Ulmus campestris*). Then we have a hardy and desirable Elm, the Scotch, or Wych Elm. This is not as rapid a grower as the others, but it is one of the best for our climate. The Exmouth Elm is not as fast a grower as the first two, but we think it the prettiest elm we have seen. It is rather high priced, and not very plenty, owing to difficulty in propagating young trees. The Fastigiate is still more rare, and grows somewhat in the form of a feather, and the Huntington, with other varieties, and the Camperdown and common English Weeping, are English Elms. The comments we make, it should be remembered, apply only to Long Island; they may not be appropriate to other sections.

The English Field Elm and the Cork-barked English and Dutch Elms are liable to have the young growth killed back in winter, for the reason that their wood does not ripen perfectly, and often become unsightly objects, especially young trees. For this reason, these three kinds are but little planted here, and the nurseries at Flushing have nearly or quite abandoned their propagation. The two Cork-bark Elms are very much addicted to throwing up suckers after they are about fifteen years old, and soon become a great nuisance, and many are the owners that wish they had never planted them. If there were no other desirable shade trees, we might endure them, but there are many, and if planters wish to avoid the mowing and grubbing of the suckers, they will not plant the Cork-barks. We can not have a flower bed or plant shrubbery near them before, ere long, the elm roots spread through the enriched soil, robbing them of their nourishment, and commence to throw up suckers forthwith.

Our American Elm, called the Weeping and White Elm sometimes, is a first-class tree in all respects. We do not know of a fault, if justice is only done to it. The Slippery Elm (*Ulmus fulva*) is not common here, and but few in comparison are planted, probably on account of its slower growth and small size. Neither do we see many of the Corky White Elm, or the Winged or Wahoo, as they are inferior to our noble American White Elm.

The next class of trees, the Maple, are equally as desirable shade trees, and are now the most fashionable class for planting around New York. The Sugar Maple is the finest American species, but it requires a rather moist soil to reach its perfection. On light and dry soils, the European Sycamore and Norway succeed better. The Red Flowering Maple grows plentifully in moist soils and woods, but for a shade tree it is in but little demand. It is inferior in its best estate to the Norway Sycamore and Sugar. The Silver-leaf, or White Maple, will grow more in one year with us than the Swamp, or Red Maple, will in three. Its chief beauty is in its early and brilliant bloom. We have the Striped-bark Maple, pretty when young, sometimes called Moosewood; the Mountain Maple, a shrub; Black Sugar Maple, differing but little from the Rock

Maple; the White Maple, the fastest grower of all; and the Ash-leaf Maple, Negundo, or Box Elder. The growth of this is so crooked, and it throws out so many side shoots, that but few are fit for sale in the nurseries. They look pretty, with their green bark and light-green foliage, in contrast with other trees, but they are not, and probably will never be, extensively planted.

If we were asked what tree to plant near the house for shade that would combine the elements of beauty of form, density of shade, long continuance in foliage, pretty bloom, and fine autumnal decoration, with entire hardiness and freedom from any objection, we should select the Norway Maple. The European Sycamore Maple is a faster grower, and makes a fine bushy head, but is inferior, in some respects, to the Norway.

We may add that, with us, the American Linden, or Basswood, grows faster than the European, and its leaves do not turn brown and fall off in autumn, as the latter generally does. ISAAC HICKS.

NEW PLANTS.

WE take the following notices of new plants from our English exchanges:

CYPRIPEDIUM SCHLIMII. *Schlim's Lady's Slipper* (*Bot. Mag.* t. 5614).—A pretty species from New Granada, found in moist places at an elevation of 4,000 above the sea level. It is a stemless, terrestrial plant, with leathery ligulate leaves, and the flower-stem bears half a dozen flowers, sepals and petals white, richly spotted with crimson, the lip is white behind, but has a deep crimson blotch in front.

TAPEINOTES CAROLINÆ. *Empress Caroline's Tapeinotes* (*Bot. Mag.* t. 5623).—Gesneriaceæ. A superb stove plant, introduced by Mr. Bull. It was discovered during the Brazilian travels of the present Emperor of Mexico (Maximilian I.), and is named in honor of the Empress of Mexico. It is a small under shrub, the leaves opposite, four to six inches long, oblong lanceolate, bluish green above, bright red purple below. Flowers solitary, corolla an inch and a half long, white. Will be highly esteemed for its handsome foliage and elegant flowers.

ANGRÆCUM CITRATUM. *Citron-yellow Angræcum* (*Bot. Mag.* t. 5624).—Orchideæ. A curious and pretty species, the flowers are produced in a long pendulous raceme, flowers three quarters of an inch in diameter, flat, pale straw color.

IMPATIENS LATIFOLIA. *Broad-leaved Cingalese Balsam* (*Bot. Mag.* t. 5625).—Balsamineæ. A perennial Balsam, native of Ceylon and the Himalaya. It is a branching shrub, two or three feet high, with ovate leaves and rosy flowers.

CLAVIJA FULGENS. *Brilliant-flowered Clavija* (*Bot. Mag.* t. 5626).—Myrsineæ. A very beautiful plant from South America. The trunk is about four feet high, very stout, leaves ten to fourteen inches long, three to five inches broad; racemes erect, four to five inches long; the rachis entirely hidden by the densely crowded flowers, corolla half an inch in diameter, deep orange red, yellow in the disc. The rich color of the crowded flowers, and the very distinct character of the whole plant, render it a striking ornament of the stove.

WEIGELIA MIDDENDORFFIANA V. PURPURATA. *Purple-flowered variety of Weigelia Middendorffiana.* A robust-growing, hardy shrub, with handsome dark-green leaves, and large panicles of flowers, which are purplish red, shading to black at the base of the petals.

AMARYLLIS (HIPPEASTRUM) ALBERTI (*L'Illust. Hort.* t. 496).—A handsome double-flowered amaryllis, the segments of the flowers lobed and notched, the color vermilion red.

GROUPING.

BY JOHN ELLIS.

PROBABLY one of the greatest attractions of English gardens is the art displayed in combining together shrubs and trees, which give such bold relief to their noble grounds. This system, termed "grouping," generally effects two objects—grandeur in its general outline, and screens or divisions where found requisite. The classes of plants used for the purpose in England are generally evergreens, the beautiful habit of which, combined with their large and glossy foliage, adapts them admirably for this purpose. How much we miss them here in our Northern States, to add luster to our beautiful landscape! The reader, we think, is mentally asking what plants we refer to; well, we have reference to the old and charming Portugal laurel, the common laurel, the laurestina, and several others of this class. Masses of these plants are grouped together with gravel-walks which lead us away, often through not more than an acre of ground, till we begin to think there is no end to the extent of it. Such walks are "lovers' walks," for they are beloved by old and young. The gardener, too, loves them, for they yield protection to his tender plants and choice fruits, that would oftentimes be blasted by the icy winds and chilly frosts of the long spring-time of merry England. How often do we hear the moans of our fruit-culturists, in the moments of their despondency, occasioned by the blast of some petted "Duchess," or a fungoid rupture in the renowned "Delaware!" Such delicate and tender botanical organisms were never destined by Pomona to expose themselves to the hurricane blast that drives headlong and furiously across this mighty continent! No, never. We have often seen some pet of the canine species wrapped in warm clothes to ward off this inauspicious gale; but, alas, for our would-be profitable fruit-trees, they may die and rot if they can not take care of themselves The fine feature given to grounds in England by "grouping," we would like to see in the form of the *beautiful and practical* here. The beautiful, by the introduction of more evergreens to the grounds of our wealthy men, and grouped so that a majority of those unsightly out-buildings be shut out of view; and shelter given to the dwelling. In the practical form, by surrounding our fruit and vegetable grounds, and also intersecting the same by a selection of evergreens that will be at once useful and ornamental. What is there that so much refreshes a winter scenery as the beautiful evergreens? What gives more encouragement to the little warblers of the forest to persevere in the destruction of the vast horde of tormenting insects we have to contend with, than the warm, thickly-set leaves and branches of the evergreens? "But," says the reader, "those evergreens that grow and flourish so beautifully in England will not stand the winters of our Northern States." This is very true; but why not let us use our own? What is there more beautiful in the known world in the way of an evergreen, when properly grown, than Abies Canadensis? They may tell us of the beauties of "Deodara," but our first love is the Hemlock. As a single specimen, nothing that we know of can excel it. We wish to impress on the mind of the reader, that if our winters will not admit the planting of those varieties of evergreen shrubs so common in use in English grouping, we can produce a similar effect here with evergreens that we know are perfectly hardy. The Norway Spruce in clumps are really majestic, and so are the Austrian Pines. Then when we come to require groups smaller, according to the planned order of the ground-work, we can group the common arborvitæ. A hundred of

them together, and planted thickly, in a few years' time assume the appearance of one solid body of evergreens, looking, in fact, more like one massive plant.

Evergreens planted in this style always retain perfect their *outside line of beauty*, their external invariably appearing perfect. The Norway Spruce treated in this way is a desirable acquisition to the grounds. No one need fear the plant growing away out of bounds, for whatever size or height is desired, "topping" the plants will insure it. The Norway is equally good for a hedge, as is also the Abies Canadensis, and will bear the pruning-hook just as well as does the Honey Locust or Osage Orange. In speaking of this system of grouping the evergreens in newly-worked grounds, if practiced, it will be the means of adding more solidity to the general appearance of the whole, the means of cutting off unsightly objects, protection from winds, a general enliveliment to the desolation of winter, and add much warmth to those situations which are naturally open and bleak. Then, again, there is another good reason why we should plant the evergreens more extensively, and this is because of their human health-producing properties. The exhalations from the pines, spruce, cedars, etc., are so powerful, that many persons in debilitated conditions are sent by their physicians to specified localities in Europe to inhale their aroma, and then return home with new constitutions. In reference to our gardens for fruit-trees and vegetables, etc., European gardens have their walls and cross walls; these are not only for the training of fruit-trees, but they are for shelter and protection. Many of us here consider any plowed-up piece of ground, and it planted with vegetables, a garden, where the weeds oftentimes are the greater crop; but such a term is only a perversion of the English language. A garden means a place of beauty and loveliness, neatness and order—a place of serene, calm grandeur, and its proprietor part and particle of the same. We think this is as it should be, for God and man first conversed in such a place. Then can we not add to the grandeur of our gardens, not by surrounding them with walls and iron work, Italian architecture in the form of solid masonry, whose incongruity becomes doubly so when contrasted with its externals and surroundings, but by the tasteful introduction of beltings of evergreens, so harmoniously arranged that they shall be both useful and ornamental? Arrange for shelter, screen the winds from our vineyards and pear orchards, spend a little more money in this and less in something else, then we shall have the grapes to ripen earlier, the pears will not *shout aloud* in their blossoms and keep *dumb* silence in their *fruit* time. Then shall gardeners and amateurs reap better rewards for labors, and our fruit-bearing plants and trees be credited with better dispositions and greater charity in their natures.

EDITOR'S TABLE.

To Contributors and Others.—Address all Communications, for the Editorial and Publishing Departments, to Geo. E. & F. W. Woodward, 37 Park Row, New York.

May is a busy month in the vegetable garden. Peas want hoeing, and perhaps brushing; early beets, parsneps, carrots, etc., if sowed the last month, want weeding. If not sown, the sooner the task is done the better for your chance of long, strong tubers. Make the ground deep and mellow.

Melons, cucumbers, sweet corn, squashes, beans, etc., all to be planted this month.

Keep the melons and cucumbers and squashes each a good distance apart, if possible. Tomatoes when first taken from the frame and planted should have a box around them a few days, until their roots get newly established. The same also of melons and cucumbers taken from the frame. In making melon and cucumber hills, put in plenty of well-rotted manure, and distribute it wide as well as deep. Lima beans want rich, well-manured soil, or they give but a poor return. Celery plants need to be pricked out into a gentle spent hot-bed frame. Cauliflower plants, as well as cabbages, are benefited by adding a handful of bone meal in each hill where they are to be planted.

MESSRS. EDITORS: John F. Bennett, Esq., in the April number, asks if, in the weedy vineyards where I saw as much rot as in those of clean cultivation, the "weeds were free from rot?" Truly, I can not answer him yea or nay. My recollection is, that the weeds were at the time, most of them, in what would be termed a ripened state, and hence decaying; there might have been fungoid upon them—I do not recollect of noting it. I have a great respect for the dead, but do not regard the remarks he made when alive as any more infallible than if he were still alive. The mind of man improves and changes from year to year, and many a man makes remarks at fifty which at fifty-two he would be unwilling to substantiate. REUBEN.

IF you expect to gather good fruit, or large and fragrant flowers, keep the soil frequently stirred; never let it get packed down and dried. If drought comes, the more you stir the land the better. Soil stirred after four o'clock P. M. will absorb dew almost equal to the effect of a small shower. Many years ago, we kept a large nursery fresh, green, and growing all summer, by keeping our plow and cultivator working from three P. M. to dark, and sometimes a little on moonshiny nights. Grass fields all around us were burned out. forests were brown, and yet our trees and plants grew on as usual, and all by means of constant stirring of the soil.

DAHLIAS may be planted out any time after the 10th of the month. Deep, moist ground gives the best growth and blooms; while as manure, we have never found anything equal to a weekly application in liberal quantity of soap-suds water and chamber lye.

WETHERSFIELD, CONN., *March* 14, 1867.

MESSRS. EDITORS: Two years ago I noticed an apple-tree in full and vigorous bearing, while those in its neighborhood had been badly eaten by the canker-worm, that great scourge of our New England orchards. Against the trunk there had been made a heap of coal ashes, the refuse of the winter's fire. Judging this to have had the effect to prevent the ascent of the insect, I last year tried the experiment on a few trees, with perfect success. The grub was kept off from trees where the ashes were applied, while trees immediately around it not thus protected were badly eaten.

Should this prove a remedy after careful trial, it will economize and divert to a new use this hitherto useless product of our coal stoves.

I applied it to several plum-trees which had previously borne sparingly, and the result was an enormous yield the following season. J. W. GRISWOLD.

STIR the soil carefully around Japan lilies or other bulbs that are now coming strong out of the ground.

PEACH-TREES.—This is the best month to prune peach-trees. Take out all dead wood; shorten back the last year's growths one third to one half; take away entire most of the puny little twigs, and shorten others back into spurs for bearing another year. Clear away all borers from the roots.

"PENNY WISE, POUND FOOLISH."—Many, very many, in their improvements of grounds, arranging of trees, positions of roads, etc., can yearly have this old adage safely applied to them. Reader, we hope you are not among the number. It is a common thing for a new beginner, a man of wealth, to suppose that in arrangement of his grounds, the position of trees, etc., he knows as much as any one, or that his gardener, to whom he pays a good salary, is quite competent, and under this view his planting and the arrangement of his place is made. This same man would consider it bad policy to employ a cheap hand to make him a coat, for although the tailor might sew strong, yet there would be in the shape and set a feature that wherever he wore the coat would betray the maker. And just so it is in arrangement of grounds, positions and curves of roads, arrangement of trees, etc.; the gardener may be a perfect workman, very often a much better practical hand with tree and plant than the landscapist, but from want of study and an innate expanded taste, he can no more arrange trees on a lawn or around the buildings to the best effect than the cheap tailor can give to his coat the style of the day. Every one who prepares a new place should call in for consultation, at least once, a competent landscape gardener, a man whose mind is and has been attuned to the subject, who may not perhaps be half as good a tree planter as many gardeners, but who has studied light and shade, harmony and color of foliage, breadth, form, and height of tree, until, at a glance over a place, he can see where and what will create upon it features of beauty and grandeur.

This "penny wise, pound foolish" system is often practiced by men under the impress that they can not afford to pay ten or twenty dollars a day for a man just to look about. If they would think one moment how this looking about, sticking a stick here, another there, and noting the tree to be planted, is going to increase in permanent beauty their property, they would not hesitate. Without this staking by an artist, many a man has in a few years to take up and remove many trees. Some are too near the paths; others that are in the center of a group do not grow as fast as the outside ones, and consequently can not be seen, and so on, keeping his place for years in a constant state of removal and renewal, with a face of garish newness, never of quiet peace and repose.

FRUIT-TREES may yet be pruned; indeed, it is better to do it now than in mid-winter. Pruning now will be for the purpose of creating form and more vigorous growth. Trees that are already growing thriftily had better be left until the last of July or early August, when the pruning will have a tendency to check extended growths and increase the number of fruit-buds.

VINEYARD vines now require constant care. Very much of the success of the summer may be said to rest in the early starting. Leave now only just the number of buds you wish to grow from the main stem or arms for next year's fruiting, rubbing out all others. In many sections this should have been done last month, but in some cold ranges the buds do not push much until this time. As the laterals grow, do not pinch them until they have made at least two leaves; and as the fruiting shoots grow, do not pinch back to leave less than three leaves beyond the fruit.

PELARGONIUMS will now be flowering freely. Water liberally and often, with liquid manure. Keep the plants as near the glass as possible, and shade them at noonday.

PLANT Gladiolus bulbs this month. Select your colors, and plant the most brilliant in the center of the bed.

THIS is a good month to propagate all green-house plants.

LANCASTER, O., *February* 17, 1867.

MESSRS. EDITORS: In February number HORTICULTURIST, under Editor's Department, the following item occurs:

"Experiments of years in succession have shown that well-ripened but medium-sized tubers planted whole, result in giving the most vigorous character of plant and most even-sized tubers as the crop; large potatoes planted whole give a few extra large potatoes each hill, while cut pieces of one and two eyes each do not give strong plants, and too often have too many small valueless tubers."

Now, perhaps, this is good advice in New York, but in Ohio we would consider it a decided waste of material to plant whole tubers. Last year I planted three bushel Garnet Chilé potatoes.

Cut from one to two eyes, and dropped two pieces six inches apart every eighteen inches, covering with earth from one to two inches, and then spread bagasse all over the ground, six to eight inches. Without any further attention, I gathered from that lot one hundred bushels large, even-sized potatoes, that will sell in any market. My Garnet Chilé, not affected with rot, while all other varieties that I had planted were. I. A. FETTERS.

N. B.—I send, by express, sample, so that you may judge as to size and quality.

I. A. F., V. P. Hocking Valley Hort. Soc.

[We are obliged to our correspondent for the record of his experiment in potato growing; but one season's result is only an experiment, indicative of what may be in after seasons, and not illustrative or exemplifying any fixed fact. We have ourselves practiced the system of growing potatoes under a covering of straw, bagasse, etc., and while we have obtained good quantity of crop three years out of four in our practice, the tubers when cooked were not dry and mealy.

Our statement, to which I. A. F. takes exception, was made from records of many experiments gathered from all quarters of the Union; and it is a little singular that some of the strongest records in favor of what we gave as results of practice, came from growers in Ohio. To show our correspondent that one or two experiments are no guide, we will tell him that some years since we grew one of the very finest crops, both in size of tuber, quality, and yield, from planting simply the eyes cut from potatoes. Again we practiced it, and with only moderate results. Last year we experimented again, and obtained a very meager return. It is our pleasure to continue experiments, and we shall try various ways of planting this season, and hope I. A. F. will do so also, and report us his record of results. The potatoes were duly received, and are fine specimens.]

NEW GRAPES—SEE MARCH NUMBER.—Dr. J. A. Warder, of Cincinnati, writes us that in our notice of the Longworth and Lyman grapes we committed an error, and refers us to the Pomological Transactions of 1866 for correction. We took our item from the report of that Society's Secretary, as published in the *Ohio Farmer;* but referring to the Transactions, page 46, we find nothing to convince us that we committed any error in our remarks. He also refers us to the *Horticultural Annual*, which we have also looked up, but can not find what he evidently would wish us to see, viz., that we, not Dr. Warder and the Secretary of the Ohio Pomological Society, have been hasty. The report, in noting them, says they were "*found* in the garden of the late N. Longworth, Esq.," etc. We have great respect for the memory of the departed, and shall be rejoiced if seedling vines left behind him produce fruit which shall gladden and cheer every beholder.

LAWNS require frequent mowing and rolling at this season. If left to grow so as to send up the seed stem at this time, it will be difficult to get the grass again into good shape this season. As the hot weather approaches, mowings will not require to be as frequent.

American Pomological Society.—The undersigned give notice that the eleventh session of this Society will commence in the city of St. Louis, Mo., on Wednesday, Sept. 11, 1867, at eleven o'clock A.M., at Mercantile Library Hall, and will continue several days. All Horticultural, Pomological, Agricultural, and other kindred institutions in the United States and British Provinces are invited to send delegations as large as they may deem expedient; and all other persons interested in the cultivation of fruits are invited to be present and take seats in the Convention.

Among the prominent subjects which will come before the Society at this session will be that of the revision of the Society's Catalogue of Fruits. The special Committee appointed for this purpose are now, with the various State and Local Committees, actively engaged in collecting such information as will aid in determining what varieties are best adapted to the different sections and districts of our country; and this information, in the form of reports, will be submitted to the action of the Convention. In compliance with a resolution passed at the last session of the Society, the several State Pomological and Horticultural Associations are requested to compile lists for their own States or Districts, and forward them, at as early a day as possible, to P. Barry, of Rochester, N. Y., Chairman of the Committee on the Revision of the Catalogue.

Members and delegates are requested to contribute specimens of the fruits of their respective districts, and to communicate in regard to them whatever may aid in promoting the objects of the Society and the science of American Pomology; and as the fruits of the South and Southwest will then have attained their size, it is especially desirable that a grand display from these sections be made.

Each contributor is requested to come prepared with a complete list of his collection, and to present the same with his fruits, that a report of all the varieties entered may be submitted to the meeting as soon as practicable.

All persons desirous of becoming members can remit the admission fee to Thomas P. James, Esq., Treasurer, Philadelphia, who will furnish them with Transactions of the Society. Life membership, ten dollars; biennial, two dollars.

Packages of fruits, with the name of the contributor, may be addressed as follows: "American Pomological Society," care of C. M. Saxton, corner Fifth and Walnut streets, St. Louis, Mo.

Marshall P. Wilder, *President.*
James Vick, *Secretary.*

Bedding Plants.—About the 10th of this month all bedding plants may be planted out. It is always best to harden them off, as it were, for a few days after being received from the green-house, by placing them in an open frame and shading them slightly. If planted out in the border immediately when received from the forcing frames or green-houses, they often flag and die. It is also always best to head them back one third to one half in planting, thus taking away the most succulent and unripe parts, leaving the supplies from the roots to fill more perfectly and push forward with new vigor the remaining buds.

Ives and Delaware Wines.—Mr. J. M. McCullogh, of Cincinnati, will please accept our thanks for samples of the above-named wines. With Mr. McCullogh, we should be glad to see more vineyards, but we should also like to see more pure wine, simply fermented grape-juice. Mr. M. says he has sold for the raiser Ives wine at $4 25 per gallon, and Delaware at $4, to the Longworth Wine House. Certainly they must have a peculiar market for wine at Cincinnati, when even at our present tariff and gold rates, superior Rhine wines are sold in New York market at $3 to $4 per gallon.

As strawberry plants come into bloom, look them over, and eradicate at once any chance seedling or incorrect plant that may have happened to get among them.

BOOK NOTICES.

NOW READY—WOODWARD'S RECORD OF HORTICULTURE FOR 1866, edited by A. S. Fuller, a writer well known to our readers as the author of "The Forest Tree Culturist," "Grape Culturist," "Strawberry Culturist," and from his numerous contributions to the pages of the HORTICULTURIST.

Mr. Fuller, in his preface, thus states the purpose of the work: "We propose to publish in January of each year, a volume in which we shall endeavor to show the actual state of horticulture at that time; the principal horticultural events of the preceding year, and any new developments that may have been discovered in regard to the more common fruits and flowers in cultivation. We do not propose to record the advent of every new fruit or flower, but only to give their merits or demerits after they are fully known. We shall endeavor to gather information from all parts of the country, and keep our readers informed as to which particular fruits and flowers are best suited for particular locations."

Among the numerous excellent articles in this work, those chapters which treat of the Lily, its propagation and varieties; the Gladiolus; the Clematis, small fruits, etc., are each alone worth the price of the volume. Sent post-paid from this office for $1.

THE AMERICAN FRUIT CULTURIST, containing Practical Directions for the Propagation and Culture of Fruit Trees in the Nursery, Orchard, and Garden. With descriptions of the principal American and Foreign Varieties cultivated in the United States. By John J. Thomas. Illustrated with four hundred and eighty accurate figures. New York: William Wood & Co. Price $3. Something over twenty years since, John J. Thomas issued his first edition of the "American Fruit Culturist," which for conciseness and order of arrangement, plain, practical teachings of how to grow and cultivate trees and fruits, was regarded of such value as to make its possession almost a necessity by every fruit-grower. Since that time the author has twice revised his work, and now gives it to us almost entirely re-written, and exhibiting in its order and system all that method so peculiar to its author, while at the same time its teachings are extended and varied in accordance with the great improvements and progress made in fruit culture. As a book to guide in the practical working of the nursery or orchard, it is now one of the best, if not *the* best, published; and as a guide to the value of fruits and descriptions of varieties, while it has not a complete list, yet enough are described to meet all practical wants. Sent from this office, post-paid, on receipt of price.

ACKNOWLEDGMENTS.

JOHN EDGERTON, Esq., of Vinewood Nursery, Coal Creek, Iowa, sends us tomato seeds, which he describes as having spotted markings, and therefore a curiosity. They are in our amateur friend's hands, and will be duly reported upon.

Jas. Littlehale, Esq., Stockton, Cal., sends us several varieties of melon seeds and one of tomato, for which he has our thanks. These also we have passed over for our friend to grow and report upon.

We are indebted to J. S. Downer, Esq., of Fairview, Todd County, Ky., for seeds of the Downer water-melon. In speaking of it, Mr. D. says he received the variety thirty-two years since from Louisiana, and has since kept it pure. It has a remarkably thin rind, a rich and sweet flesh, and weighing fifty pounds and upward each. We have passed the seed into careful hands, and hope in due time to hear how it succeeds at the North.